

REMARKS

The present communication is responsive to the Official Action mailed December 19, 2002.

Claims 1-10 were rejected under 35 U.S.C. § 112, second paragraph on the basis that the word "generally," as used in the recitation of an emitting surface, "generally in the form of a surface of revolution" about a central axis, renders the claim indefinite. By the present amendment, that phrase in claim 1 has been replaced by the equivalent recitations that the emitting surface extends around the central axis and faces outwardly away from the central axis (as is shown in all of Figs. 1-6). Likewise, the recitation in claim 1 that the refractive surface in its inflated condition is "generally in the form of a surface of revolution" has been replaced by the recitation that the refractive surface extends around "said central axis," i.e., the same central axis as referred to in the recitation of the emitter. Similar changes have been made in method claim 9. New claims 11 and 12, dependent from claims 1 and 9, respectively, have been added. These new claims recite that the emitting surface "is a surface of revolution about said central axis" and that the refractive surface in the inflated condition "is a surface of revolution about said central axis." Claim 3 has been amended to depend from new claim 11, whereas claim 4 has been amended to depend from claim 3. In light of these amendments, reconsideration and withdrawal of the § 112, second paragraph, rejection are earnestly solicited.

Claims 1-3 and 9 were rejected as anticipated by Fujio et al., U.S. Patent 5,471,988. Reconsideration of this rejection is respectfully requested. The Official Action specifically refers to Figs. 95a-95c of the Fujio disclosure. The Examiner's point that this disclosure incorporates an emitter (reference numeral 601) inflatable lens (reference

numeral 603) is well taken. However, those elements do not meet the structural recitations of claim 1. Claim 1 states specifically that the emitting surface extends around the central axis and further recites "said lens surrounding said emitter." One example of this arrangement is shown in Figs. 1 and 2, in which lens 717 surrounds emitter 720 and both the refractive surface of lens 717 and the emitting surface of emitter 720 extend around the same central axis 724. The embodiments in *Fujio* pointed out in the Official Action clearly do not meet the recitation that the lens surrounds the emitter. In *Fujio* Figs. 95a-95c, the emitter is "a plane-type therapeutic transducer 601" (col. 62, lns. 47-48) coupled with a further apparently fixed lens 602 and a variable focus, inflatable lens 603. Neither lens 602 nor lens 603 surrounds emitter 601. Indeed, there would be no purpose to such an arrangement, inasmuch as *Fujio*'s plane emitter 601 is intended to direct energy in only one direction (upwardly, as seen in Fig. 95a), and the lens overlies the plane emitter on only one side. Inasmuch as the reference does not meet the structural recitation of claim 1, the rejection of claim 1 under § 102 should be withdrawn. New claim 11 distinguishes over *Fujio* for the same reasons, as does claim 3, dependent on claims 1-11.

Independent claim 9 incorporates the positive method step of inflating the lens to a configuration "having a refractive surface extending around said central axis and extending around said emitting surface." *Fujio* fails to meet this recitation. In *Fujio*, a disk-like inflatable lens overlying a plane transducer can be inflated or deflated, but cannot be inflated so as to bring its refractive surface to a configuration in which the refractive surface of the lens extends around the emitting surface of the transducer. New claim 12 distinguishes over *Fujio* for the same reasons.

Claims 4-8 and 10 were rejected under § 103 as unpatentable over *Fujio*. This rejection should be withdrawn for the same reasons as advanced above in connection with claims 1 and 9. The Examiner has not pointed out anything in *Fujio* as suggesting modification of its structure to meet the recitations discussed above in connection with the § 102 rejection.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

As it is believed that all of the objection, rejections and requirements set forth in the Official Action have been fully met by the foregoing amendments and remarks, favorable reconsideration and allowance of all claims in the application are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he telephone applicant's attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

Dated: March 19, 2003

Respectfully submitted,

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Version With Markings to Show Changes MadeIN THE CLAIMS

1. (Amended) Apparatus for applying ultrasonic energy to tissue within the body of a living subject comprising:

(a) an ultrasonic emitter having an emitting surface generally in the form of a surface of revolution about extending around a central axis and facing outwardly away from said central axis;

(b) an inflatable lens, said lens having a refractive surface generally in the form of a surface of revolution about extending around said central axis when said lens is in an inflated condition, said lens surrounding said emitter so that at least some ultrasonic energy emitted at said emitting surface will be directed through said refractive surface of said lens into the tissue of the subject.

3. (Amended) Apparatus as claimed in claim 112, wherein said inflatable lens is adapted to focus ultrasonic energy emitted by said emitter into an annular focal region surrounding said central axis.

4. (Amended) Apparatus as claimed in claim 23, further comprising a bearing balloon surrounding said emitter and said lens, said bearing balloon having a bearing surface adapted to engage the wall of an organ of the subject.

9. (Amended) A method for applying ultrasonic energy to tissue surrounding a tubular internal organ of a living subject comprising:

(a) inserting an ultrasonic emitter having an emitting surface generally in the form of a surface of revolution about extending around a central axis and an inflatable lens surrounding said emitter into the interior of said organ; and

(b) inflating said lens so as to bring said lens to a configuration having a refractive surface substantially in the form of a surface of revolution about extending around said central axis and extending around said emitting surface; and

(c) actuating said emitter to emit ultrasonic energy so that said ultrasonic energy passes outwardly away from said axis through said lens and is concentrated by said lens into a region having axial extent smaller than the axial extent of the emitter.